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(56) Documents Cited

GB 2237774 A JP 090212069 A US 4900111 A  
US 4773718 A US 4725111 A

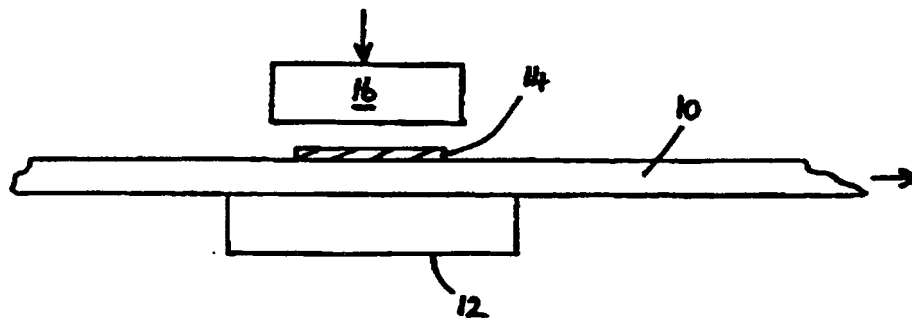
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(54) Abstract Title

**Providing holograms on cans**

(57) A can, preferably a metal can, is provided with a hologram on its surface as an anti-counterfeiting measure. The hologram is preferably applied by a hot foil blocking process in which a foil 14 carrying a heat-curable adhesive is pressed into contact with the can surface 10. The process can be applied to both metal and plastics cans, and to both a flat can blank 10 as shown and the curved surface of a made-up can. The hologram-bearing foil 14 is of very thin aluminium and is taken from a reel where it was stored on a backing sheet.



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CANS AND METHODS OF MANUFACTURE

This invention relates to cans, and to methods for the manufacture of cans. The invention is particularly, but not  
5 exclusively, concerned with cans such as are used for holding paint, oil both edible and lubricating, and chemicals.

The increase in recent years of counterfeiting has been a problem in many areas where goods and services are offered to the public. This problem is now of concern to the can  
10 industry where for example cans of paint may be offered for sale with the trade dress of the can indicating that the contents are from a particular manufacturer, whereas they are not.

It is a primary object of the present invention to  
15 provide a can which incorporates an anti-counterfeiting measure. It is a secondary object of the present invention to provide a can which incorporates a special decorative surface effect.

In accordance with one aspect of the invention this is  
20 achieved by a can which bears a hologram on its surface.

Preferably, the can is a metal can, for example of tinplate.

In accordance with another aspect of the invention there is provided a method of manufacture of a can which includes  
25 the application of a hologram to the surface which is or will be the external surface of the can.

Preferably, the application of the hologram is by the use of a hot foil blocking process. This is essentially a labelling process, using a heat-curable adhesive.

30 Holograms are produced by an embossing process using a nickel die. Masters for security holograms are very

expensive. Up to 14,000 lines per cm are embossed a few microns into the surface of a very thin aluminium foil. The foil is carried by a backing sheet and can be dispensed, as with labels. The underside of the foil is coated with a heat-  
5 curable adhesive.

In the application of the hologram to the receiving surface by the hot foil blocking process, the said surface must be hot, for example of the order of 190°C for tinplate, and pressure has to be applied to the foil to press it against  
10 the surface. The important parameters are the temperature, the pressure, the pressure time and the adhesive used. These must be balanced to produce a satisfactory end product.

In order that the invention may be more fully understood, reference is made to the accompanying drawing which shows,  
15 schematically, the application of a hologram to a can blank.

The drawing illustrates the application of a hologram to a can blank which here is represented as a sheet 10 of tinplate. This is presented to the apparatus as a flat sheet. Below the sheet 10 is a platen 12. The foil bearing the  
20 hologram is indicated at 14 and the thickness is exaggerated in the drawing. In practice, the foil 14 is extremely thin. The foil is taken from a reel on which the foil is stored on a backing sheet. The foil is provided with a heat-curable  
25 adhesive on its underside and can be peeled from the backing sheet. In order to effect adhesion between the foil 14 and the tinplate 10, the surface of the sheet 10 must be hot, for example of the order of 190°C in the case of tinplate. This can be achieved either by the use of a heated platen 12, or by heating the sheet 10 to the appropriate temperature before  
30 it is brought into register with the platen. This can be achieved by passing the sheet through an induction oven for

example. Alternatively, one can use a combination of advance heating and heating via the platen.

When the foil 14 bearing the hologram is in register with the tinplate sheet 10, pressure is applied by a pressure pad 5 16 so that the heat-curing is carried out under pressure. The cycle time for this is approximately 5 or 6 seconds in the case of foil applied to tinplate at a temperature of about 190°C.

One can either carry out the process on an intermittent 10 basis, i.e. by moving the sheet 10 on a "stop-start" basis, using a stationary platen and a vertically displaceable pressure pad 16, or one can alternatively carry out the application process with a continuously moving sheet 10 and by moving the other parts simultaneously with the sheet.

15 In the application of hologram foils to a rigid substrate such as a sheet 10 of tinplate, it is important that the tinplate surface is flat and that the foil is applied with precision. This is in order to achieve even pressure over the whole surface area of the foil. Otherwise, an imperfect 20 product will result.

After the hologram has been applied to the sheet 10, the sheet can then be made up into the can in the conventional way.

Although the present invention is particularly 25 appropriate for use with metal cans, one could use the method described above for the application of holograms to cans made of plastics material. In that case however, a substantially lower temperature would be required, and a suitable adhesive.

Although, as described above, the process of the 30 invention is carried out on a flat material, such as a sheet 10, it is also within the scope of the invention to apply a

hologram-bearing foil directly to the curved surface of a made-up can. This requires the provision of a suitably surved platen or its equivalent within the can and a pressure pad which has an appropriately curved surface. The process is 5 essentially the same however as described above.

## CLAIMS:

1. A can which bears a hologram on its surface.
2. A can according to claim 1, in which the can is a  
5 metal can.
3. A can as claimed in claim 2, in which the can is of  
tinplate.
4. A can according to claim 1, 2 or 3, bearing a hologram  
applied by a hot foil blocking process.
- 10 5. A method of manufacture of a can which includes the  
application of a hologram to the surface which is or will be  
the external surface of the can.
6. A method according to claim 5, which includes applying  
the hologram by a hot foil blocking process.
- 15 7. A method according to claim 5 or 6, in which a foil  
bearing the hologram is applied to tinplate at a temperature  
of the order of 190°C.
8. A method according to any of claims 5 to 7, in which  
pressure is applied to a foil bearing the hologram for a  
20 period of about 5 or 6 seconds.



Application No: GB 9724651.6  
Claims searched: 1-8

Examiner: Stephen Smith  
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**Patents Act 1977**  
**Search Report under Section 17**

**Databases searched:**

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK CI (Ed.P): B8D(DCW10, DCW21); B8F(FBG)

Int CI (Ed.6): B65D 25/34, 25/36; G09F 3/00, 3/02

Other: ONLINE:WPI

**Documents considered to be relevant:**

| Category | Identity of document and relevant passage |  | Relevant to claims |
|----------|---|--|--------------------|
| X        | GB2237774 A                               | (DAI NIPPON) line 12 of page 52 to line 9 of page 53 | 1-3, 5             |
| X        | JP 9212069 A                              | (TOPPAN) hologram label stuck onto container         | 1-3, 5             |
| X        | US 4900111                                | (D'AMATO) lines 48-65 of column 3                    | 1-3, 5             |
| X        | US 4773718                                | (WEITZEN) line 65 of column 1 to line 10 of column 2 | 1-3, 5             |
| X        | US 4725111                                | (WEITZEN) lines 8-12 of column 5                     | 1-3, 5             |

X Document indicating lack of novelty or inventive step  
Y Document indicating lack of inventive step if combined with one or more other documents of same category.  
& Member of the same patent family

A Document indicating technological background and/or state of the art.  
P Document published on or after the declared priority date but before the filing date of this invention.  
E Patent document published on or after, but with priority date earlier than, the filing date of this application.

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